

Free-living marine nematodes from San Antonio Bay (Río Negro, Argentina)

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Abstract

The dataset of free-living marine nematodes of San Antonio Bay is based on sediment samples collected in February 2009 during doctoral theses funded by CONICET grants. A total of 36 samples has been taken at three locations in the San Antonio Bay, Santa Cruz Province, Argentina on the coastal littoral at three tidal levels. This presents a unique and important collection for benthic biodiversity assessment of Patagonian nematodes as this area remains one of the least known regions. In total 7,743 specimens of free-living marine nematodes belonging to two classes, eight orders, 37 families, 94 genera and 104 species were collected.

Keywords

Nematoda, Enoplea, Chromadorea, South Atlantic

Introduction

This is the first study on nematodes performed on a sub-Antarctic salt marsh along the coast of Río Negro Province, Argentina. This site has a high biodiversity and was declared a Protected Natural Area N°2.670 of the province of Río Negro in 1993 as well as an international reserve of the hemispheric network of Shorebird Reserve within the Wetlands program for the Americas. However, it is also an urban center where economic, industrial and tourist activities take place. The objectives of the study were to collect, identify and discover the structure and diversity of the nematode community of San Antonio Bay. The coverage (Figure 1) of this dataset includes two classes: Chromadorea (76%) and Enoplea (24%); eight orders: Monhysterida (39%), followed by Enoplida (23%) and Chromadorida (19%) as main occurrences; and thirty-seven families (see Figure 1).

Taxonomic ranks

Kingdom: Animalia Phylum: Nematoda

Class: Chromadorea, Enoplea

Order: Monhysterida, Enoplida, Chromadorida, Desmodorida, Araeolaimida, Plectida, Rhabditida, Dorylaimida.

Family: Xyalidae, Linhomoeidae, Monhysteridae, Sphaerolaimidae, Siphonolaimidae, Chromadoridae, Cyatholaimidae, Ethmolaimidae, Selachinematidae, Microlaimidae, Desmodoridae, Monoposthiidae, Coninckiidae, Comesomatidae, Diplopeltidae, Axonolaimidae, Leptolaimidae, Aegialoalaimidae, Haliplectidae, Ceramonematidae, Tarvaiidae, Tylenchidae, Mesorhabditidae, Criconematidae, Panagrolaimidae, Oncholaimidae, Oxystominidae, Ironoidae, Thoracostomopsidae, Tripyloididae, Anticomidae, Anoplostomatidae, Enchelidiidae, Trefusiidae, Lauratonematidae, Enoplidae, Dorylaimidae.

Genera: Odontophora, Synodontium, Comesoma, Metasabatieria, Sabatieria, Coninckia, Campylaimus, Diplopeltula, Chromadora, Chromadorella, Chromadorina, Prochromadorella, Actinonema, Rhips, Dichromadora, Neochromadora, Spilophorella, Marylynnia, Paracantonchus, Paracyatholaimus, Pomponema, Paraethmolaimus, Gammanema, Halichoanolaimus, Latronema, Molgolaimus, Metachromadora, Onyx, Polysigma, Spirinia, Bolbolaimus, Microlaimus, Nudora, Desmolaimus, Metalinhomoeus, Terschellingia, Eleutherolaimus, Paralinhomoeus, Siphonolaimus, Diplolaimella, Diplolaimelloides, Halomonhystera, Monhystera, Sphaerolaimus, Amphimonhystera, Cobbia, Daptonema, Gonionchus, Linhystera, Metadesmolaimus, Omicronema, Paramonohystera, Promonhystera, Pseudosteineria, Rhynchonema, Theristus, Xyalidae gen.1, Ceramonema, Pselionema, Tarvaia, Haliplectus, Cyartonema, Deontolaimus, Leptolaimus, Mesorhabditis, Macroposthonia, Panagrolaimus, Tylenchus, Dorylaimus, Chaetonema, Cephalanticoma, Enoplus, Epacanthion, Oxyonchus, Thoracostomopsidae gen.1, Conilia, Dolicholaimus, Syringolaimus, Halalaimus, Calyptronema, Eu-

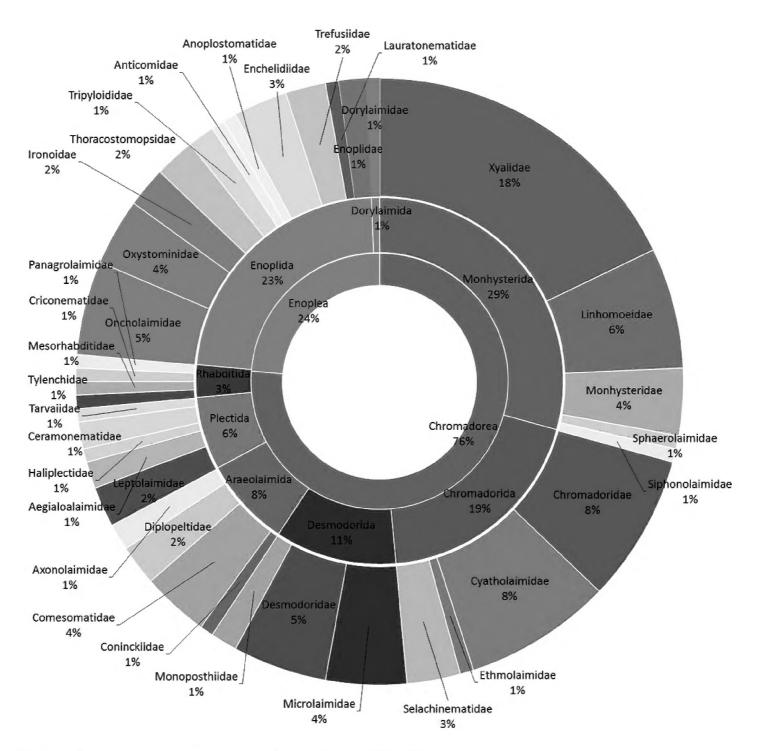


Figure 1. Taxonomic coverage by class, order and family.

rystomina, Abelbolla, Adoncholaimus, Viscosia, Metoncholaimus, Oncholaimus, Lauratonema, Rhabdocoma, Trefusia, Trefusiidae gen.1, Bathylaimus, Tripyloides.

Species with higher occurrences: Microlaimus globiceps, Paraethmolaimus dahli, Thalassomonhystera parva, Microlaimus decoratus, Diplolaimelloides oschei, Nudora crepidata, Viscosia macramphida, Chromadorina longispiculum, Diplolaimella gerlachi, Leptolaimus luridus.

Spatial coverage

General spatial coverage: San Antonio Bay, Río Negro Province, Argentina (Figure 2). For this study three sites were selected: "Ciudad" (A), located in the north of the bay; "Baliza Camino" (B), located off the mouth of the bay of San Antonio and "Banco Perdices" (C),

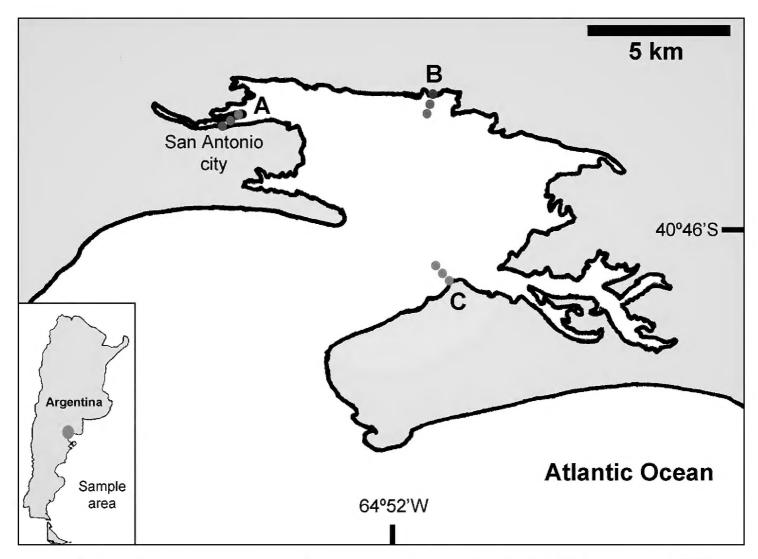


Figure 2. Spatial coverage. San Antonio Bay, Argentina. Sites: **A** "Ciudad" **B** "Baliza Camino" **C** "Banco Perdices". Levels = u, m, l..

located 12 km south of "Las Grutas". At each sampling site, three tidal levels were chosen: upper-littoral, high tide, salt-marsh habitat (u); middle littoral, mean tide, un-vegetated habitat (n) and low littoral, low tide, un-vegetated habitat (l) (Figure 3).

Coordinates: "Ciudad": Au = 40°43'40.2"S; 64°57'41.1"W; Am = 40°43'39.0"S; 64°57'41.6"W; Al = 40°43'39.0"S; 64°57'39.5"W. "Baliza Camino": Bu = 40°42'59.9"S; 64°50'46.8"W; Bm = 40°43'05.8"S; 64°50'58.5"W; Bl = 40°43'11.6"S; 64°51'14,6"W. "Banco Perdices": Cu = 40°47'00.8"S; 64°50'54.3"W; Cm = 40°47'05.6"S; 64°51'17.8"W; Cl = 40°46'51.9"S; 64°51'02.8"W.

Temporal coverage

12-14 February 2009.

Methods

Sampling description: At each site and level location, four replicates (20 ml) were sampled with a PVC syringe (60 ml, inner diameter 2.9 cm) and separated by a dis-

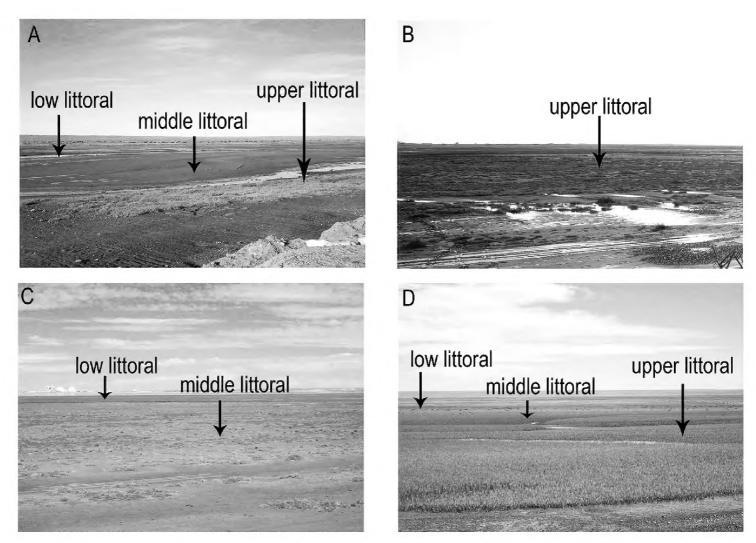


Figure 3. San Antonio Bay, Argentina. Views from the sampling sites. **A** "Ciudad" **B, C** "Baliza Camino" **D** "Banco Perdices".

tance of 5–10 m each: four for marine nematodes counts, two for organic matter and two for sediment analyses. Each sample was fixed in situ, with a solution of 5% formaldehyde in filtered sea water with the addition of Rose Bengal tint. Marine nematodes were extracted from samples using the elutriation/decantation LUDOX TM (colloidal silica polymer) method at a specific gravity of 1.15, quantifying only organisms passing through a 500 µm mesh and then retained by a 63 µm mesh. Samples were evaporated to anhydrous glycerol and permanent slides made (Somerfield and Warwick 1996). The taxonomic classification followed proposed by De Ley and Blaxter (2004). For the identification of species international keys (Platt and Warwick 1983, Platt and Warwick 1988, Warwick et al. 1998, Lorenzen 1994, Abebe et al. 2006) and taxonomical papers (Pastor de Ward 1978, 1980, 1984a, b, c, d, e, 1985, 1986, 1988, 1989, 1990, 1991, 1993, 1995a, b, 1996, 1998a, b, c, 1999, Pastor de Ward and Lo Russo 2009, Villares and Pastor de Ward 2012, Lo Russo et. al. 2012, Villares et al. 2013, Pastor de Ward et al. 2013, Lo Russo et. al. 2015) were used. Holotypes and paratypes are deposited in the Collection of Nematodes of the Centro Nacional Patagónico (CENPAT-CONICET), Chubut, Argentina recognized as National Service of Biological Data of Argentina and included in their web page from 2011 (http:// www.gbif.org/dataset/06df03fc-8973-490c-af74-089fffae9e24; http://www.gbif.org/ dataset/d592283b-b00e-4a39-9499-289842ccddf1).

Project details

Project title: "Comparación de comunidades de nematodos de marismas de San Antonio Oeste (río Negro) y San Julián (Sta. Cruz)". [Comparison of nematode marsh communities of San Antonio Oeste (Río Negro) and San Julián (Sta. Cruz)]. Doctoral thesis Universidad Nacional del Comahue (Lo Russo 2012).

"Diversidad funcional y producción secundaria de las comunidades de nematodos de las marismas de San Antonio (Río Negro) y de la ría de San Julián (Santa Cruz)". [Functional diversity and secondary production of nematode marsh communities of San Antonio (Río Negro) estuary and San Julián (Santa Cruz)". Doctoral thesis Universidad Nacional del Comahue (Villares 2014).

Personnel: Catalina Pastor de Ward (Project Director, meio-benthos specialist), Virginia Lo Russo and Gabriela Villares (field work, nematodes identification, data collection and analysis), Viviana Milano (grant-holding student, data input), Lidia Miyashiro (Darwin core data input), Renato Mazzanti (software engineer, data base manager).

Study extent description: The San Antonio Bay marine nematodes is a dataset that gives new insights on the taxonomic and geographic distribution of south Atlantic marine nematodes, covering an under-explored region of the southern Atlantic coasts. This is the first study on marine nematodes in this site. This dataset presents species occurrences and species richness of the individual free-living marine nematodes present at three coastal areas ("Ciudad", "Baliza Camino", "Banco Perdices") of the San Antonio Bay at three different tidal levels (upper, middle and low-littoral).

In total 7,443 specimens of free-living marine nematodes belonging to two classes, eight orders, 37 families, 94 genera and 140 species were collected.

Genera and Species	Family	Order	Class
Odontophora peritricha Wieser, 1956	Axonolaimidae	Araeolaimida	Chromadorea
Synodontium sp. 1	Axonolaimidae	Araeolaimida	Chromadorea
Comesoma sp. 1	Comesomatidae	Araeolaimida	Chromadorea
Metasabatieria sp. 1	Comesomatidae	Araeolaimida	Chromadorea
Sabatieria mortenseni (Ditlevsen, 1921)	Comesomatidae	Araeolaimida	Chromadorea
Sabatieria punctata (Kreis, 1924)	Comesomatidae	Araeolaimida	Chromadorea
Sabatieria wieseri Platt, 1985	Comesomatidae	Araeolaimida	Chromadorea
Coninckia sp. 1	Coninckiidae	Araeolaimida	Chromadorea
Campylaimus gerlachi Timm, 1961	Diplopeltidae	Araeolaimida	Chromadorea
Campylaimus sp. 2	Diplopeltidae	Araeolaimida	Chromadorea
Diplopeltula sp.1	Diplopeltidae	Araeolaimida	Chromadorea
Chromadora nudicapitata Bastian, 1865	Chromadoridae	Chromadorida	Chromadorea
Chromadorella sp.1	Chromadoridae	Chromadorida	Chromadorea
Chromadorina longispiculum Pastor de Ward, 1985	Chromadoridae	Chromadorida	Chromadorea
Prochromadorella sp. 1	Chromadoridae	Chromadorida	Chromadorea
Prochromadorella sp. 2	Chromadoridae	Chromadorida	Chromadorea
Actinonema sp. 1	Chromadoridae	Chromadorida	Chromadorea

Genera and Species	Family	Order	Class
Rhips sp. 1	Chromadoridae	Chromadorida	Chromadorea
Dichromadora sp. 1	Chromadoridae	Chromadorida	Chromadorea
Neochromadora alejandroi Lo Russo & Pastor de Ward, 2012	Chromadoridae	Chromadorida	Chromadorea
Neochromadora papillosa Pastor de Ward, 1865	Chromadoridae	Chromadorida	Chromadorea
Spilophorella paradoxa (De Man, 1888)	Chromadoridae	Chromadorida	Chromadore
Marylynnia sp. 1	Cyatholaimidae	Chromadorida	Chromadore
Marylynnia sp. 2	Cyatholaimidae	Chromadorida	Chromadore
Marylynnia sp. 3	Cyatholaimidae	Chromadorida	Chromadore
Paracanthonchus austrospectabilis Wieser, 1954	Cyatholaimidae	Chromadorida	Chromadore
Paracanthonchus punctatus (Bastian, 1865)	Cyatholaimidae	Chromadorida	Chromadore
Paracanthonchus sp. 1	Cyatholaimidae	Chromadorida	Chromadore
Paracanthonchus sp. 2	Cyatholaimidae	Chromadorida	Chromadore
Paracanthonchus sp. 3	Cyatholaimidae	Chromadorida	Chromadore
Paracyatholaimus chilensis Gerlach, 1953	Cyatholaimidae	Chromadorida	Chromadore
Paracyatholaimus sp. 1	Cyatholaimidae	Chromadorida	Chromadore
Pomponema sp. 1	Cyatholaimidae	Chromadorida	Chromadore
Paraethmolaimus dahli (Gerlach, 1953)	Ethmolaimidae	Chromadorida	Chromadore
Gammanema sp. 1	Selachinematidae	Chromadorida	Chromadore
Gammanema sp. 2	Selachinematidae	Chromadorida	Chromadore
Halichoanolaimus sp. 1	Selachinematidae	Chromadorida	Chromadore
Latronema sp. 1	Selachinematidae	Chromadorida	Chromadore
Molgolaimus sp. 1	Desmodoridae	Desmodorida	Chromadore
Molgolaimus sp. 2	Desmodoridae	Desmodorida	Chromadore
Metachromadora sp. 1	Desmodoridae	Desmodorida	Chromadore
Metachromadora spectans Gerlach, 1957	Desmodoridae	Desmodorida	Chromadore
Onyx sp. 1	Desmodoridae	Desmodorida	Chromadore
Polysigma sp. 1	Desmodoridae	Desmodorida	Chromadore
Spirinia septentrionalis Cobb, 1914	Desmodoridae	Desmodorida	Chromadore
Bolbolaimus sp. 2	Microlaimidae	Desmodorida	Chromadore
Microlaimus conothelis (Lorenzen, 1973) Jensen, 1978	Microlaimidae	Desmodorida	Chromadore
Microlaimus capillaris Gerlach, 1957	Microlaimidae	Desmodorida	Chromadore
Microlaimus decoratus Pastor de Ward, 1991	Microlaimidae	Desmodorida	Chromadore
Microlaimus globiceps De Man, 1880	Microlaimidae	Desmodorida	Chromadore
Microlaimus sp. 2	Microlaimidae	Desmodorida	Chromadore
Nudora besnardi (Gerlach, 1956)	Monoposthiidae	Desmodorida	Chromadore
Nudora crepidata Wieser, 1954	Monoposthiidae	Desmodorida	Chromadore
Desmolaimus sp. 3	Linhomoeidae	Monhysterida	Chromadore
Desmolaimus sp. 4	Linhomoeidae	Monhysterida	Chromadore
Metalinhomoeus gloriae Pastor de Ward, 1989	Linhomoeidae	Monhysterida	Chromadore
Metalinhomoeus parafiliformis Pastor de Ward, 1989	Linhomoeidae	Monhysterida	Chromadore
Metalinhomoeus typicus De Man, 1907	Linhomoeidae	Monhysterida	Chromadore
Terschellingia longicaudata De Man, 1907	Linhomoeidae	Monhysterida	Chromadore
Terschellingia sp. 2	Linhomoeidae	Monhysterida	Chromadore
Eleutherolaimus sp. 1	Linhomoeidae	Monhysterida	Chromadore
Paralinhomoeus visitus Pastor de Ward, 1989	Linhomoeidae	Monhysterida	Chromadore

Genera and Species	Family	Order	Class
Siphonolaimus auratus Wieser, 1956	Siphonolaimidae	Monhysterida	Chromadorea
Diplolaimella gerlachi Pastor de Ward, 1984	Monhysteridae	Monhysterida	Chromadorea
Diplolaimella ocellata (Bütschli, 1874)	Monhysteridae	Monhysterida	Chromadorea
Diplolaimelloides oschei Meyl, 1954	Monhysteridae	Monhysterida	Chromadorea
Halomonhystera disjuncta (Bastian, 1865)	Monhysteridae	Monhysterida	Chromadorea
Thalassomonhystera parva (Bastian, 1865)	Monhysteridae	Monhysterida	Chromadorea
Sphaerolaimus pacificus Allgen, 1945	Sphaerolaimidae	Monhysterida	Chromadorea
Amphimonhystera sp. 2	Xyalidae	Monhysterida	Chromadorea
Cobbia macrodentata Lo Russo & Pastor de Ward, 2012	Xyalidae	Monhysterida	Chromadorea
Daptonema laxus Wieser, 1956	Xyalidae	Monhysterida	Chromadorea
Daptonema sp. 2	Xyalidae	Monhysterida	Chromadorea
Daptonema sp. 3	Xyalidae	Monhysterida	Chromadorea
Gonionchus sp. 1	Xyalidae	Monhysterida	Chromadorea
Linhystera sp. 1	Xyalidae	Monhysterida	Chromadorea
Metadesmolaimus sp. 3	Xyalidae	Monhysterida	Chromadorea
Metadesmolaimus sp. 4	Xyalidae	Monhysterida	Chromadorea
Metadesmolaimus sp. 5	Xyalidae	Monhysterida	Chromadorea
Omicronema sp. 1	Xyalidae	Monhysterida	Chromadorea
Paramonohystera sp. 4	Xyalidae	Monhysterida	Chromadorea
Promonhystera sp. 1	Xyalidae	Monhysterida	Chromadorea
Pseudosteineria sp. 1	Xyalidae	Monhysterida	Chromadorea
Rhynchonema separatum Lorenzen, 1975	Xyalidae	Monhysterida	Chromadorea
Rhynchonema sp. 1	Xyalidae	Monhysterida	Chromadorea
Rhynchonema sp. 2	Xyalidae	Monhysterida	Chromadorea
Rhynchonema sp. 3	Xyalidae	Monhysterida	Chromadorea
Theristus lorenzeni Pastor de Ward, 1985	Xyalidae	Monhysterida	Chromadorea
Theristus modicus Wieser, 1956	Xyalidae	Monhysterida	Chromadorea
Theristus sp. 2	Xyalidae	Monhysterida	Chromadorea
Theristus sp. 3	Xyalidae	Monhysterida	Chromadorea
Theristus sp. 4	Xyalidae	Monhysterida	Chromadorea
Theristus sp. 5	Xyalidae	Monhysterida	Chromadorea
Xyalidae gen. 1 sp. 1	Xyalidae	Monhysterida	Chromadorea
Ceramonema sp. 1	Ceramonematidae	Plectida	Chromadorea
Pselionema sp. 1	Ceramonematidae	Plectida	Chromadorea
Tarvaia sp. 1	Tarvaiidae	Plectida	Chromadorea
Haliplectus salicornius Pastor de Ward, 1984	Haliplectidae	Plectida	Chromadorea
Cyartonema flexile Cobb, 1920	Aegialoalaimidae	Plectida	Chromadorea
Cyartonema sp. 1	Aegialoalaimidae	Plectida	Chromadorea
Deontolaimus papillatus De Man, 1880	Leptolaimidae	Plectida	Chromadorea
Leptolaimus luridus Timm, 1963	Leptolaimidae	Plectida	Chromadorea
Leptolaimus puccinelliae Gerlach, 1959	Leptolaimidae	Plectida	Chromadorea
Mesorhabditis sp. 2	Mesorhabditidae	Rhabditida	Chromadorea
Macroposthonia sp. 1	Criconematidae	Rhabditida	Chromadorea
Panagrolaimus sp. 1	Panagrolaimidae	Rhabditida	Chromadorea
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Genera and Species	Family	Order	Class
Dorylaimus sp. 1	Dorylaimidae	Dorylaimida	Enoplea
Chaetonema patagonica Lo Russo et al., 2015	Anoplostomatidae	Enoplida	Enoplea
Cephalanticoma sp. 1	Anticomidae	Enoplida	Enoplea
Enoplus benhami Ditlevsen, 1930	Enoplidae	Enoplida	Enoplea
Enoplus meridionalis Steiner, 1921	Enoplidae	Enoplida	Enoplea
Epacanthion bicuspidatum Lo Russo et al., 2012	Thoracostomopsidae	Enoplida	Enoplea
Oxyonchus sp. 1	Thoracostomopsidae	Enoplida	Enoplea
Thoracostomopsidae gen. 1 sp. 2	Thoracostomopsidae	Enoplida	Enoplea
Conilia divina Gerlach, 1956	Ironoidae	Enoplida	Enoplea
Dolicholaimus marioni De Man, 1888	Ironoidae	Enoplida	Enoplea
Syringolaimus smarigdus Cobb, 1928	Ironoidae	Enoplida	Enoplea
Halalaimus sp. 1	Oxystominidae	Enoplida	Enoplea
Halalaimus sp. 2	Oxystominidae	Enoplida	Enoplea
Halalaimus sp. 3	Oxystominidae	Enoplida	Enoplea
Halalaimus sp. 4	Oxystominidae	Enoplida	Enoplea
Thalassoalaimus sp. 2	Oxystominidae	Enoplida	Enoplea
Calyptronema keiense Wieser 1953	Enchelidiidae	Enoplida	Enoplea
Calyptronema maxweberi (De Man, 1922)	Enchelidiidae	Enoplida	Enoplea
Eurystomina sp. 1	Enchelidiidae	Enoplida	Enoplea
Abelbolla sp. 1	Enchelidiidae	Enoplida	Enoplea
Adoncholaimus sp. 2	Oncholaimidae	Enoplida	Enoplea
Oncholaimellus paracarlbergi Pastor de Ward, 1993	Oncholaimidae	Enoplida	Enoplea
Viscosia macramphida Chitwood, 1951	Oncholaimidae	Enoplida	Enoplea
Metoncholaimus sp. 1	Oncholaimidae	Enoplida	Enoplea
Metoncholaimus sp. 2	Oncholaimidae	Enoplida	Enoplea
Oncholaimus sp. 1	Oncholaimidae	Enoplida	Enoplea
Oncholaimus sp. 2	Oncholaimidae	Enoplida	Enoplea
Lauratonema sp. 1	Lauratonematidae	Enoplida	Enoplea
Rhabdocoma sp. 1	Trefusiidae	Enoplida	Enoplea
Trefusia litoralis (Allgén, 1932)	Trefusiidae	Enoplida	Enoplea
Trefusiidae gen. 1 sp. 1	Trefusiidae	Enoplida	Enoplea
Bathylaimus australis Cobb, 1894	Tripyloididae	Enoplida	Enoplea
Tripyloides amazonicus (Gerlach, 1957)	Tripyloididae	Enoplida	Enoplea

Quality control description: The geo-referencing of all specimens were recorded using a Garmin eTrex Legend GPS (WGS84 Datum) with an accuracy of less than 10 m and with at least 5 satellites. The taxonomic identification of specimens, scientific names, and their current accurate spelling were verified by C. Pastor de Ward, a free-living marine nematode specialist. Other post-validation procedures (including geographic coordinate format, congruence between collection and identification dates, absence of ASCII anomalous characters) were checked using the Darwin Test software (http://www.gbif.es/darwin_test/Darwin_Test_in.php).

Dataset description

Object name: Darwin Core Archive free-living marine Nematodes from San Antonio

Bay (Río Negro, Argentina).

Character encoding: UTF-8
Format name: Darwin Core Archive format

Format version: 1.0

Distribution: http://ipt.cenpat-conicet.gob.ar:8081/resource?r=sao2009#

Publication date of data: 2013-10-25

Language: English

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External datasets

Object name: Centro Nacional Patagónico (CENPAT-CONICET)

Distribution: http://ipt.cenpat-conicet.gob.ar:8081/resource?r=sao2009#

Object name: Ministerio de Ciencia y Tecnología de Argentina (Sistema Nacional de

Datos Biológicos - SNDB)

Distribution: GBIF: http://www.gbif.org/dataset/d592283b-b00e-4a39-9499-289842-

ccddf1

Formatted: English (U.K.)

Field Code Changed

Metadata language: English

Date of metadata creation: 2014-08-27

Hierarchy level: Dataset

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